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• • • •

• • • •

```

LL          IIIII
LL          IIIII
LL          II
LL          II
LL          II
LL          II
LL          II
LL          II
LL          II
LL          II
LL          II
LL          II
LL          II
LL          II
LLLLLLLLLL IIIII
LLLLLLLLLL IIIII

          SSSSSSS
          SSSSSSS
          SS
          SS
          SS
          SS
          SSSSS
          SSSSS
          SS
          SS
          SS
          SS
          SSSSSSS
          SSSSSSS

```


(2) 49
(3) 62
(4) 98

HISTORY ; Detailed Current Edit History
DECLARATIONS
COB\$CVTRQP_R9

COBSCVTRQP_R9
1-007

COBOL Convert Rounded Quad to Packed L 16

15-SEP-1984 23:42:13 VAX/VMS Macro V04-00
6-SEP-1984 10:43:57 [COBRTL.SRC]COBCVTRQP.MAR;1

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(1)

```
0000 1      .TITLE COBSCVTRQP_R9  COBOL Convert Rounded Quad to Packed
0000 2      .IDENT /1-007/      ; File: COBCVTRQP.MAR
0000 3
0000 4
0000 5 *****
0000 6
0000 7 *
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0000 25 *
0000 26 *****
0000 27
0000 28 FACILITY: COBOL TYPE CONVERSION
0000 29 ++
0000 30 ABSTRACT:
0000 31      This module contains the routine which converts signed quadwords
0000 32      to packed with rounding.
0000 33
0000 34
0000 35 --
0000 36
0000 37 VERSION: 1
0000 38
0000 39 HISTORY:
0000 40
0000 41 AUTHOR:
0000 42      John Sauter, 29-DEC-78
0000 43
0000 44 MODIFIED BY:
0000 45
0000 46
0000 47
```


COBSCVTRQP_R9
1-007

M 16
COBOL Convert Rounded Quad to Packed 15-SEP-1984 23:42:13 VAX/VMS Macro V04-00
HISTORY ; Detailed Current Edit History 6-SEP-1984 10:43:57 [COBRTL.SRC]COBCVTRQP.MAR;1 Page 2
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0000 49 .SBTTL HISTORY ; Detailed Current Edit History
0000 50
0000 51
0000 52 : Edit History for Version 1 of COBCVTRQP
0000 53 :
0000 54 : 1-001 - Original from Marty Jack.
0000 55 : 1-002 - Use byte displacement lengths. JBS 29-DEC-78
0000 56 : 1-003 - Make entry point symbol global. JBS 03-JAN-1979
0000 57 : 1-004 - Minor editing cleanup. JBS 11-JAN-1979
0000 58 : 1-005 - Bug fixes and cleanup. MLJ 10-Mar-1979
0000 59 : 1-006 - 19 digit temps. MLJ 13-Mar-1979
0000 60 : 1-007 - Cosmetic changes. RKR 18-OCT-79


```
0000 62      .SBTTL  DECLARATIONS
0000 63
0000 64 :
0000 65 : INCLUDE FILES:
0000 66 :
0000 67 :
0000 68 :
0000 69 : EXTERNAL SYMBOLS:
0000 70 :     NONE
0000 71 :
0000 72 :
0000 73 :
0000 74 : MACROS:
0000 75 :     NONE
0000 76 :
0000 77 :
0000 78 :
0000 79 : PSECT DECLARATIONS:
0000 80 :     .PSECT  _COB$CODE          PIC, SHR, LONG, EXE, NOWRT
0000 81
0000 82 :
0000 83 : EQUATED SYMBOLS:
0000 84 :     NONE
0000 85 :
0000 86 :
0000 87 :
0000 88 : OWN STORAGE:
0000 89 :
0000 90 :
0000 91 : + The following constant has the value 2**32.  It is used for scaling
0000 92 : the high 32 bits and for compensating for unsigned arithmetic.
0000 93 : -
6C 29 67 49 29 04 0000 94 BIAS:  .PACKED 4294967296      ; 2**32
0000000A 0006 95 BIAS_DIGITS=10
0006 96 :
```



```
0006 98 .SBTTL COB$CVTRQP_R9
0006 99
0006 100 :++
0006 101 : FUNCTIONAL DESCRIPTION:
0006 102 :
0006 103 : Converts a 64-bit (quadword) integer to packed with rounding.
0006 104 :
0006 105 : CALLING SEQUENCE:
0006 106 :
0006 107 : JSB COB$CVTRQP_R9 (scale.rl.v, src.rq.r, dstlen.rl.v, dst.wp.r)
0006 108 :
0006 109 : Arguments are passed in R6, R7, R8 and R9.
0006 110 :
0006 111 : INPUT PARAMETERS:
0006 112 :
0006 113 : SCALE.rl.v The power of ten by which the internal
0006 114 : representation of the source must be
0006 115 : multiplied to scale the same as the
0006 116 : internal representation of the dest.
0006 117 : SRC.rq.r The number to be converted
0006 118 : DSTLEN.rl.v The number of digits in the destination
0006 119 :
0006 120 : IMPLICIT INPUTS:
0006 121 :
0006 122 : All of the trap bits in the PSL are assumed off.
0006 123 :
0006 124 : OUTPUT PARAMETERS:
0006 125 :
0006 126 : DST.wp.r The place to store the converted number
0006 127 :
0006 128 : IMPLICIT OUTPUTS:
0006 129 :
0006 130 : NONE
0006 131 :
0006 132 : COMPLETION CODES:
0006 133 :
0006 134 : NONE
0006 135 :
0006 136 : SIDE EFFECTS:
0006 137 :
0006 138 : Destroys registers R0 through R9.
0006 139 :
0006 140 :--
0006 141 :
0006 142 COB$CVTRQP_R9::
0006 143 SUBL2 #20,SP ; Allocate temp space
0009 144 CMPV #31,#1,(R7),4(R7) ; Is number in longword range?
000F 145 BNEQ 11$ ; Br if not to do slower code
0011 146 CVTLP (R7),#10,(SP) ; Convert low order longword
0015 147 ASHP R6,#10,(SP),#5,R8,(R9) ; Scale to destination
001C 148 ; (also clears R0)
001C 149 BVS 10$ ; Br if overflowed
001E 150 INCL R0 ; Indicate success, R0 = 1
0020 151 10$: ADDL2 #20,SP ; Deallocate temp space
0023 152 RSB ; Return
0024 153 :+
0024 154 : Come here if the input number is not in longword range. Sum the
```

```
04 A7 67 5E 14 C2
01 1F EC
13 12
6E 0A 67 F9
6E 0A 56 F8
02 1D
50 D6
5E 14 C0
05
```



```
0024 155 ; converted high order longword, multiplied by 2**32, and the converted
0024 156 ; low order longword, considered as an unsigned number.
0024 157 ;
13 6E 0A 0A 04 A7 F9 0024 158 11$: CVTLP 4(R7),#10,(SP) ; Convert high order longword
0A D3 AF 0A 25 0029 159 MULP #BIAS_DIGITS,BIAS,#10,(SP),#19,8(SP)
08 AE
0030
0032 160 ; Multiply by 2**32
0032 161 CVTLP (R7),#10,(SP) ; Convert low order longword
06 18 0036 162 BGEQ 12$ ; Br if nonnegative
6E 0A C4 AF 0A 20 0038 163 ADDP4 #BIAS_DIGITS,BIAS,#10,(SP)
08 AE 13 6E 0A 20 003E 164 ; Correct for signed conversion
58 05 63 13 56 F8 0044 165 12$: ADDP4 #10,(SP),#19,8(SP) ; Sum low and high order parts
004B 166 ASHP R6,#19,(R3),#5,R8,(R9) ; Scale to destination
004B 167 ; (also clears R0)
02 1D 004B 168 BVS 13$ ; Br if overflowed
50 D6 004D 169 INCL R0 ; Indicate success, R0 = 1
5E 14 C0 004F 170 13$: ADDL2 #20,SP ; Deallocate temp space
05 0052 171 RSB ; Return
0053 172 ;
0053 173 .END
```


COB\$CVTRQP_R9
Symbol table

COBOL Convert Rounded Quad to Packed^{E 1}

15-SEP-1984 23:42:13
6-SEP-1984 10:43:57

VAX/VMS Macro V04-00
[COBRTL.SRC]COB\$CVTRQP.MAR;1

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BIAS 00000000 R 01
BIAS DIGITS = 00000000A
COB\$CVTRQP_R9 00000006 RG 01

+-----+
! Psect synopsis !
+-----+

PSECT name	Allocation	PSECT No.	Attributes														
ABS	00000000 (0.)	00 (0.)	NOPIC	USR	CON	ABS	LCL	NOSHR	NOEXE	NORD	NOWRT	NOVEC	BYTE				
COB\$CODE	00000053 (83.)	01 (1.)	PIC	USR	CON	REL	LCL	SHR	EXE	RD	NOWRT	NOVEC	LONG				

+-----+
! Performance indicators !
+-----+

Phase	Page faults	CPU Time	Elapsed Time
Initialization	29	00:00:00.05	00:00:01.66
Command processing	117	00:00:00.32	00:00:02.40
Pass 1	69	00:00:00.27	00:00:01.49
Symbol table sort	0	00:00:00.00	00:00:00.00
Pass 2	48	00:00:00.22	00:00:02.32
Symbol table output	2	00:00:00.01	00:00:00.01
Psect synopsis output	2	00:00:00.01	00:00:00.01
Cross-reference output	0	00:00:00.00	00:00:00.00
Assembler run totals	269	00:00:00.88	00:00:07.90

The working set limit was 750 pages.

2204 bytes (5 pages) of virtual memory were used to buffer the intermediate code.

There were 10 pages of symbol table space allocated to hold 3 non-local and 4 local symbols.

173 source lines were read in Pass 1, producing 8 object records in Pass 2.

0 pages of virtual memory were used to define 0 macros.

+-----+
! Macro library statistics !
+-----+

Macro library name	Macros defined
_\$255\$DUA28:[SYSLIB]STARLET.MLB;2	0

0 GETS were required to define 0 macros.

There were no errors, warnings or information messages.

MACRO/ENABLE=SUPPRESSION/DISABLE=(GLOBAL,TRACEBACK)/LIS=LIS\$:COB\$CVTRQP/OBJ=OBJ\$:COB\$CVTRQP MSRC\$:COB\$CVTRQP/UPDATE=(ENH\$:COB\$CVTRQP)

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VAX/VMS V4.0

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